THE LIST OF CLAIMS:

1. (Previously Presented) A method for determining a plurality of registration areas in a wireless communication system, wherein the wireless communication system comprises a plurality of first registration areas, and each of the first registration areas comprises at least one of a plurality of first partition units, the method comprising the steps of:

performing a registration area determining procedure according to a plurality of mobility data corresponding to the first partition units to determine a plurality of second registration areas, wherein each of the second registration areas comprises at least one of the first partition units;

comparing an overall cost of the first registration areas with an overall cost of the second registration areas;

determining a plurality of second partition units and a plurality of mobility data corresponding to the second partition units according to the result of comparison, wherein at least one of the second partition units is generated by combining at least two of the first partition units when the overall cost of the first registration areas is lower than or equal to the overall cost of the second registration areas, and at least one of the second partition units is generated by partitioning one of the first partition units when the overall cost of the first registration areas is higher than the overall cost of the second registration areas; and

performing the registration area determining procedure according to the mobility data corresponding to the second partition units to determine a plurality of third registration areas, wherein each of the third registration areas comprises at least one of the second partition units.

2. (Previously Presented) The method of claim 1, wherein the method is executed recursively until a plurality of $(n+1)^{th}$ registration areas and n^{th} partition units are determined that each of the $(n+1)^{th}$ registration areas includes only one n^{th} partition

unit and the overall cost of the $(n)^{th}$ registration areas is smaller than or equal to the overall cost of the $(n+1)^{th}$ registration areas.

3. (Original) The method of claim 1, wherein the mobility data at least include a plurality of mobility rates.

4. (Previously presented) The method of claim 3, wherein the mobility rates are determined by a plurality of traffic sources in the wireless communication system through at least one of the following operations which are gathering historical data, simulation and estimation.

5. (Previously presented) The method of claim 1, wherein the second partition units are determined based on a plurality of loading limits of the wireless communication system.

6. (Original) The method of claim 5, wherein the loading limits at least include a plurality of constraints corresponding to any physical or virtual equipments in the wireless communication system.

7. (Previously presented) The method of claim 1, wherein the registration area determining procedure is at least one of the K-L algorithm and the F-M algorithm.

8. (Previously presented) The method of claim 1, wherein the registration area is determined by at least one of the following: a location area (LA) of a GSM system, a routing area (RA) of a packet-switched or a 3 G systems, a registration location area (RLA)/overlapping location area (OLA) and a paging area of a PDC and a PHS system, a cell area (CA) of a 3 G systems, and an UTRAN Registration Area of a UMTS/WCDMA system.

9. (Previously Presented) The method of claim 1, wherein when the first partition units are non-partitionable, generating the second partition units by combining at least two of the first partition units is performed.

10- 18 (Canceled)